

3/3 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107623

ABSTRACT/EXTRACT--ON THE BASE OF PHOTOGRAPHS OF THE ENVELOPE OF DQ HER IT IS FOUND THAT IN 1968 THE FLUX F SUB HALPHA OF RADIATION IN THE HALPHA-LINE WAS EQUAL TO (6 PLUS OR MINUS 2) TIMES 10 NEGATIVE12 ERGS-CM PRIME2 SEC, WHEREAS THE MASS OF THE ENVELOPE WAS EQUAL TO 10 PRIME29 G AND ITS ELECTRONIC CONCENTRATION N SUBE TO 2 TIMES 10 PRIME3 CM PRIME NEGATIVE3. SEVERAL HYPOTHESES, WHICH MAY EXPLAIN THE STRATIFICATION OF EMISSION FROM DIFFERENT ELEMENTS INSIDE THE ENVELOPE, ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 629.78.002.3

BOYARENTSEV, V. N., ZOLKIN, P. I.

"Erosive Wear of Carbon-Graphite Materials"

Construkts. Materialy Na Osnove Grofita. [Structural Materials Based on Graphite -- Collection of Works], No 6, Moscow, Metallurgiya Press, 1971, pp 89-95. (Translated from Referativnyy Zhurnal Raketostroyeniye, No 1, 1972, Abstract No 1.41.200 from the resume).

Translation: The formulas showing the dependence of wear rate of the mass of common-graphite materials on temperature, pressure, density and chemical composition of the flow in the process of chemical interaction of these materials with a gas flow allow the diffusion or kinetic nature of the process to be determined, as well as the value of the preexponential factor in the Arrhenius expression for the rate of the surface chemical reaction  $K_0$  and activation energy  $E$ . An electric heating installation was used to test specimens of graphite types VPP, GRM, as well as PG material in the 1700-2600°K temperature range with a carbon dioxide gas flow speed of 5 m/sec, and air flow speed of 8 m/sec, excess pressure in the chamber 1 and 4 bar. 3 figs; 2 tables; 6 biblio refs.

1/1

Acc. Nr:

AP0052447

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

UR0455

104477p Calculating the vapor-liquid equilibrium for multi-component systems. Kafarov, V. V.; Boyarnov, A. I.; Lutsenko, V. A.; Vetokhin, V. N. (Mosk. Khim. Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Teor. Osn. Khim. Tekhnol.* 1970, 4(1), 63-72 (Russ). A program for computing the vapor-liquid equilibrium in multicomponent systems is described. The 1st part of the algorithm is aimed at establishing the parameters  $\Lambda$  of the Wilson equations. Expressions are given for the activity coefficient of an arbitrary component of a multicomponent system and for determining the parameters  $\Lambda$  from experimental binary equilibrium data of all pairs of components participating in the vapor phase of the multicomponent system. The solution is obtained by the method of successive approximations and checked by the sum of the squares of deviations of the equilibrium systems from the data obtained experimentally for several control points. The functional dependence of the vapor pressure of the pure components on the temperature is approximated either by using  $P_i^0(t) = a_0 + a_1t + a_2t^2 + a_3t^3 + \dots$ , or by the Antoine equation. The trend of calculated unknown parameters is checked by use of a minimizing function. The systems studied were:  $\text{Me}_2\text{CO}-\text{CHCl}_3-\text{EtOH}$ ;  $\text{EtOH}$ -methylcyclopentane (I)-benzene, and hexane-I-EtOH-benzene. Complete ALGOL programs are given for calculating the parameters  $\Lambda$  and the compositions of the vapor phase of a binary system at constant pressure and of the vapor phase of a multicomponent mixture at a given temperature. Experimental and calculated data are tabulated.

M. Selucky

REEL/FRA  
19821081

USSR

KAFAROV, V. V., VETOKHIN, V. N., BOYARINOV, A. I.

"Programming and Computer Methods in Chemistry and Chemical Technology"

Programmirovaniye i Vychislitel'nyye Metody v Khimii i Khimicheskoy Tekhnologii [English Version Above], Moscow, Nauka Press, 1972, 487 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V709K).

Translation: This book studies problems of the application of computer equipment for the solution of problems in chemistry and chemical technology. The principles of programming and elements of computer mathematics are presented in readable form, as well as certain general problems of the preparation of chemical and technological problems for computer solution.

1/1

- 107 -

USSR

UDC 632.954 + 631.517

BOYAROVICH, N. M., Kazakh Institute of Economics and Organization of Agriculture, Alma Ata, Kazakh Academy of Agricultural Sciences

"Combination of Mechanical and Chemical Methods of Weed Control in Growing Corn"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70, pp 47-48

Abstract: The southeastern area of Kazakhstan has excessive weed growth due to their dispersion by irrigation. In this study three possibilities were examined for weed control: triple cultivation (control), harrowing after the appearance of plants with triple cultivation, and spraying of the soil with the sodium salt of 2,4-D (0.5 kg/hectare) after seed planting and a double cultivation. Post-germination harrowing had the same effect as pre-germination spraying with 2,4-D. Substituting another spraying for the cultivation did not improve the harvest. Point seeding gave better results than square-nodular. In general, it is better to combine the mechanical and chemical methods for effective weed control.

1/1

USSR

UDC:669.187.5

ZAYTSEV, B. Ye., GOTIN, V. N., SHCHERBAKOV, A. I., SERGYEV, A. B., ZHITKOV, N. K., OKOROKOV, G. N., BOYARSHINOV, V. A., TULIN, N. A., VOYNOVSKIY, Ye. V., TOPILIN, V. V., POZDEYEV, N. P., SHALIMOV, A. G., OSIPOVA, L. A., CHERNOV, Yu. V., and RAZANOV, T. S.

"Specifics of Vacuum Arc Remelting of Nickel-Based Alloys and Stainless Steels With Reverse Arc Polarity"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 181-183

Translation: Results are presented from a study of vacuum arc remelting of nickel alloys in a crystallizer 380-480 mm in diameter with thermocouples calked in length and height. The rate of melting with reverse polarity is 20% higher with identical bath depth of liquid metal. This is a result of more intensive heat transfer from the walls of the crystallizer during melting with reverse polarity. The macrostructure, chemical composition N, O, H and mechanical properties of the metal produced by melting with forward and reverse polarity are identical. The ingot produced with reverse polarity had no corona. 2 figures; 1 table; 1 biblio. ref.

1/1

- 15 -

USSR

UDC 669.187.2.083

GOTIN, V. N., ZAYTSEV, B. YE., SHCHERBAKOV, A. I., ZHITKOV, N. K., OKOROKOV, G. N., BOYARASHINOV, V. A., VOYNOVSKIY, YE. B., TOPILIN, V. V., SHALIMOV, AL. G., OSIPOVA, L. M., CHERNOV, YU. V., ROZANOVA, T. S., and LAKTIONOV, V. S.

"Influence of Wall Thickness of Crystallizer and Consumption of Cooling Water on Conditions of Formation of Ingot During Vacuum Arc Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 178-180

Translation: In a vacuum arc furnace in a crystallizer (C) 160 mm in diameter with a current of 2.0-3.7 ka, the influence of wall thickness of C and temperature of cooling water on conditions of formation of ingot of complexly alloyed nickel-based alloys is studied. C with wall thicknesses of 50 and 18 mm were studied, the temperature on the outer surface of the C reaching 75°C in the first case, 105°C in the second. The temperature of the internal surface of the C was identical, 140-150°C. Neither a change in C thickness nor a change in water consumption from 11 to 22 m<sup>3</sup>/hr influenced the depth of the liquid metal bath, i.e., both repeated rolling of the C and reduced water consumption were permissible. 2 figures.

1/1

USSR

EDC 669.183.5+669.187.26

KISLOVA, N. A., and BOYARSHINOV, V. A.

"The Question of the Cost of Metal Products Produced by Electric Slag and Vacuum Arc Furnaces"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 189-193

Translation: The increased cost of electric slag and vacuum arc metal in comparison with metal produced by ordinary methods is related to the additional consumption of metal in manufacture of consumable electrodes and their remelting, and expenditures for operation of equipment, as well as the higher capital investments required. Analysis of these expenses based on report and plan calculations of metallurgical plants has established the magnitude of total additional expenses for certain groups of steels and alloys. Means are noted for further reduction of the cost of electric slag remelting and vacuum arc metal: total transition to cast consumable electrodes, casting of square and rectangular ingots in place of circular ingots, casting of ingots with high ratio of height to diameter and high weight, the substitution of shock peening for turning of expendable electrodes, etc. 1 table.

1/1

- 65 -



Foundry

USSR

UDC:669.187.6

VOLKOV, A. Ye., and BOYARSHINOV, V. A.

"Relationship of Dendritic Structure to Conditions of Crystallization During Remelting Processes"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 134-189

Translation: A hypothesis is suggested for the formation of secondary dendritic axes, according to which the secondary axis is formed at the moment when supercooling in the liquid bath before the tip of the main dendrite axis is identical in the forward and lateral directions.

Under certain assumptions, a dependence is produced for the distance between second order axes, rate of crystallization, and effective impurity distribution factor.

Good coincidence is established between the distances between second order axes calculated according to the formula suggested and the distances measured for ingots of type ShKh15 steel, crystallized in an ordinary mold and in the process of vacuum arc remelting. 7 figures; 7 biblio. refs.

1/1

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--TECHNICAL AND ECONOMIC COMPARISON OF ELECTROSLAG AND VACUUM ARC  
REMELTING -U-  
AUTHOR--(04)-SKLOKIN, N.F., BOYARSHINOV, V.A., KOVALEVSKIY, M.A., VOLKOV,  
S.YE.  
COUNTRY OF INFO--USSR  
SOURCE--METALLURG, FEB. 1970, (2), 29-31  
DATE PUBLISHED-----70  
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS, TECH., IND.,  
CIVIL AND MARINE ENGR  
TOPIC TAGS--ELECTROSLAG MELTING, VACUUM MELTING, VACUUM ARC, STEEL,  
ECONOMICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0929 STEP NO--UR/0130/70/000/002/0029/0031  
CIRC ACCESSION NO--AP0124590  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124590

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RIVAL MERITS OF THE ELECTROSLAG AND VACUUM ARC REMELTING OF STEELS AND ALLOYS ARE DISCUSSED, CHIEFLY FROM AN ECONOMIC POINT OF VIEW. IN GENERAL IT WOULD APPEAR THAT VACUUM ARC REMELTING IS ABOUT 1.5 TIMES AS EXPENSIVE AS ELECTROSLAG REMELTING, ALTHOUGH FURTHER OPTIMIZATION OF THE EQUIPMENT INVOLVED SHOULD NARROW THE DIFFERENCE. AT THE PRESENT TIME, VACUUM ARC REMELTING IS ONLY RECOMMENDED FOR SPECIAL CASES IN WHICH THE QUALITY OF THE RESULT OUTWEIGHS COST CONSIDERATIONS.

UNCLASSIFIED

USSR

UDC: 621.315.3

BELOUS, M. Ye., BOYARSHINOV, V. K.

"Concerning an Improvement in the Drop Process of Casting Microwires"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 90-100 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V415)

Translation: A special shield is developed to protect a melt from air currents during casting. The mass and temperature of a drop are checked indirectly by using a photomultiplier. These improvements have made it possible to develop a method of regulating the running resistance as the drop is consumed with a resultant improvement in the reproducibility of the rated resistance in the melting process. Resumé.

1/1

- 96 -

USSR

UDC [549.321.13+549.514.71]:548.4

BOYARSKAYA, R. V., SOBOLEVA, S. V., and LAPUTINA, I. P., Institute of the Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry, Academy of Sciences, USSR, Moscow

"The Combined Application of Microdiffraction and Electron-Sonde Analysis for the Diagnosis of Fine Inclusions in Sphalerites and Cassiterites"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, No 1, Jan 73, pp 79-85

Abstract: Some examples of the exposure of fine inclusions-admixtures in sphalerites and cassiterites, by means of electron microscopy and micro-röntgenospectral analysis, are examined, and their application to specific minerals is established. Very fine dendrite-like crystals and growth of chalcosine, not visible in an optical microscope, were found in sphalerite from the Zangezur deposit. The presence of molybdenite microinclusions was established in sphalerite from the Zangezur deposit. Similar inclusions of  $\text{MoS}_2$  found earlier elsewhere are an indication of the fact that molybdenum is not likely to enter into the  $\text{ZnS}$  lattice in the form of an isomorphic admixture, but forms predominantly an independent crystalline phase. Microinclusions of goethite, discovered in cassiterite from the Tubaraka deposit

1/2

USSR

BOYARSKAYA, R. V., et al., Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, No 1, Jan 73, pp 79-85

(Belgian Congo), have the character of distribution and the density which are in good agreement with the intensity of the brown coloring of the zones in the mineral.

The effectiveness of the integrated use of microdiffusion and electron-sonde analysis in application to replicas with extraction has been demonstrated. This permits refinement and supplementation of the structural characteristics by data concerning the qualitative chemical composition of the investigated specimen. 11 figures. 8 references.

2/2

- 47 -

Acc. Nr.:

ARC106137

BOYARSKIY

E.A.

Ref. Code: UR 0000

JPRS 49937

Accuracy of GAL-OMPO-2 Gravimeter on Surface Vessel

/From: Moscow, Referativnyy Zhurnal, Geofizika, Svochny Tom, No 1, 1970,  
IG171-DEP/

The authors evaluated the accuracy of operation of the GAL-OMPO-2 gravimeter during long-term ocean tests. The article describes the method for preparing the instrument for operation, making gravimetric measurements on a surface vessel and processing the observations. The total random observation error is determined, as well as the magnitude of the error dependent only on the gravimeter.

(Abstract: "Evaluation of the Accuracy of the GAL-OMPO-2 Gravimeter Operating on a Surface Vessel," by M. Ye. Artem'yev, E. A. Boyarskiy, V. I. Koren-fel'd, Ye. I. Magnitskaya and V. A. Tulin; Moscow, Morsk. Avtomatizir. Gravimetr i yego Rabota, 1969, pp 141-161)

Reel/Frame  
19881362

USSR

UDC 538.4

MKHITARYAN, A. M., BOYARSKIY, G. N., UDARTSEV, YE. P., GOLEGO, A. N.

"Study of an Electromagnetic Jet Along a Wall"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works. Kiev Institute of Civilian Aviation Engineers), 1970, No. 6, pp 92-98 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9B44)

Translation: The electrohydrodynamic control of flow in a boundary layer on a plane nonconducting plate is investigated experimentally with the aid of corona discharge between the corona electrode and the system of electrode-collectors located on the surface. The effect of the frequency  $f$  of the controlling electric field and electrode switching diagrams on the dynamic flow characteristics at different cross sections of the boundary layer is studied. The considerable increase in the rate in the region of the wall of propagation of the electrohydrodynamic jet is demonstrated. It is shown that the rise in  $f$  leads to an increase in the maximum "evoked" velocity and to a more uniform distribution of it along the section of interaction with the electric field. There is established the possibility of regulating the flow by changing the distribution of potential

1/2

- 3 -



USSR

MKHITARYAN, A. M., et al, Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii, 1970, No. 6, pp 92-98

on the electrode-collectors. It is found that the relative increment of the pulse in the boundary layer ceases to rise with an increase in the electrogas-dynamic Euler number, beginning with a certain value. A. B. Vatazhin.

2/2

BOYCHENKO, M. M.

Life Support  
Systems

50 JPRS 54968  
22 Dec 71

UDC 613.34:612.111.3

EFFECT EXERTED ON ERYTHROPOIESIS IN FISH AND BATS BY WATER REGENERATED FROM HUMAN URINE

Article by L. A. Telichenko and M. M. Boychenko, Kiev, Konstantynivskaya

Biologiya i Meditsina, Russian, Vol 5, No 2, 1971, submitted for publication 10 July 1970, pp 89-90

Biological and physicochemical methods have been developed for regenerating water from the water-bearing products of human metabolism. Physicochemical regeneration yields water which is close in its composition to distilled water, which is then enriched by a complex of mineral salts. The biological purification method evidently involves water which is biologically purer. However, this assumption requires experimental checking. This led us to trace changes in erythropoiesis in vitals during water regeneration by different methods or inhabiting a particular drink of water. We proceeded on the assumption that the overall protective reaction of the body to exposure to any ecological factor is a change in erythropoiesis: its intensification or depression. Under normal conditions a dynamic equilibrium exists in the blood between young and old erythrocytes. Impairment of this equilibrium indicates a disorder of one of the important body functions: blood formation. Old erythrocytes are osmotically less resistant than young ones. Accordingly, impurities in erythrocytes can be detected from the change in osmotic resistance in erythrocytes when a hemolytic is added to them. This is essentially the acidic erythrograms method (I. I. Gitelson and I. A. Terebov, 1957, 1958).

An erythrogram is a graphic representation of the osmotic resistance of erythrocytes with time. The form of the erythrogram can be used in determining the number of erythrocytes of different ages at the time of investigation. A peculiarity of the erythrogram is an objective photographic registration making it possible to exclude subjective errors in microscopic methods. The acidic erythrograms method was successfully used in determining early toxemia in fish (M. M. Telichenko, M. M. Boychenko and R. I. Gorshkova, M. M. Telichenko and R. I. Gorshkova).

We also used the acidic erythrograms method in studying fish and rate. The fish were placed in glass jars with a 15-liter capacity filled

USSR

UDC 681.332.65

BOYCHENKO, V. M., LEUSENKO, A. Ye., and TOTAYEV, L. T.

"A Random Number Generator With Arbitrary Distribution"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 22, Aug 71, Author's Certificate No 309356, Division G, filed 24 Sep 68, published 9 Jul 71, p 187

Translation: This Author's Certificate introduces a random number generator with arbitrary distribution containing a generator of uniformly distributed random numbers, a master clock, a digital comparison circuit, and a device for storage of distributions. The output of the generator of uniformly distributed random numbers is connected to one input of the digital comparison circuit, the output of the distribution storage device is connected to the other input of the comparison circuit, and the master clock is connected to the input of the generator of uniformly distributed random numbers. As a distinguishing feature of the patent, speed is increased by installing a logarithmic sorting device between the output of the comparison circuit and the input of the storage device. The second input of the sorting device is connected to the output of the master clock.  
1/1

- 170 -

USSR

UDC: 681.332.65

BOYCHENKO, V. M., GALUSTOV, G. G., LEUSENKO, A. Ye., POZDNYAKOV, G. M.

"Device for Automatic Control of a Multibit, Uniformly Distributed, Random Number Sensor"

USSR Author's Certificate No 236851, Filed 5 Jul 67, Published 27 Jun 69  
(from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 9, Sep 70, Abstract No 9B296P)

Translation: This Author's Certificate introduces a device for monitoring the deviation from equiprobability in each bit of a multibit, uniformly distributed, random pulse sensor. The device is distinguished by high accuracy. It contains two counters, a pulse generator, and a switching circuit. There is one illustration.

1/1

- 56 -

USSR

UDC 669.14.018.85:669-154.9

BOYCHENKO, Yu. A., and VASENEV, R. V.

"The Effect of Vacuum Remelt on Properties of High-Strength Steels for Rotors"

Moscow, Metallovedeniye, No 5, 1971, pp 57-59

Abstract: A study was made of the effect of electric arc vacuum remelt (VR) on properties of the 4Kh3N2MFTs and 42KhSN4MFTs high-strength steels used for rotors of high-speed electromotors. Results show that VR decreases the content of oxides and silicates, results in increased plasticity and ductility, increases the endurance limit of smooth specimens, but does not affect it on notched specimens. The favorable effect of VR decreases by the presence in specimens and parts of rigid stress concentrations in the form of very sharp notches or cracks.

1/1

USSR

UDC 541.183:661.183.9

DUDKINA, V. G., and BOYCHINOVA, Ye. S.

"The Sorption of Transition Metal Ions on Zirconium 'Pyrophosphate'"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, Vyp 9, 1972, pp 1982-1985

Abstract: For the desorption of Cu(II), Ni(II), and Co(II) from zirconium pyrophosphate (ZP), the curing time of the initial gel is related to the coefficient of diffusion. The volume of ZP increases about 15% to an equilibrium value in 30 minutes. The coefficient of diffusion of water was determined from expansion data and it was shown that the mobility of water in ZP was less than in organic sulfonate-cation exchange resins. Equilibrium of ZP and solution with respect to the distribution of ions takes longer, on the order of a day. Temperature, pH, anions, and the number of adsorption-desorption cycles influence the cation exchange capacity of the ZP. The shape, as well as the magnitude of the sorption isotherm is different for the three ions, Cu(II), Ni(II), and Co(II) in the order of decreasing concentrations of the metals on the ZP at equilibrium. This is related to the energies of activation: 2.38, 0.46, and 0.16 Kcal/mol respectively.

1/1

USSR

UDC 661.183.9 : 546.831'776'185

VINTER, I. K., BOYCHINOVA, YE. S., and DENISOVA, N. YE.

"Effect of Synthesis Conditions on Ion-Exchange Properties of Zirconium 'Molybdophosphates'"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, No 8, Aug 70, pp 1678-1682

Abstract: The article describes results of a study of the ion-exchange properties of zirconium "molybdophosphates" as affected by (1) the anion : zirconium ratio  $[(\text{Mo} + \text{P}) : \text{Zr}]$  in the initial solutions with a constant Mo : P ratio, (2) the Mo : P ratio with a constant  $(\text{Mo} + \text{P}) : \text{Zr}$  ratio in the initial solution, (3) the pH value of the precipitation. It was found that the static exchange capacity of the specimens increases with an increase in the  $(\text{Mo} + \text{P}) : \text{Zr}$  ratio. The optimal static exchange capacity is found in specimens with the  $(\text{Mo} + \text{P}) : \text{Zr}$  ratio in the initial solution equal to 10 : 1. Given a constant  $(\text{Mo} + \text{P}) : \text{Zr}$  ratio, the capacity drops with an increase in the molybdate and a decrease in the phosphate. The optimal conditions

1/2

USSR

VINTER, I. K., et al., Zhurnal Prikladnoy Khimii, Vol 43, No 8, Aug 70, pp 1678-1682

for obtaining granulated zirconium "molybdophosphate" specimens are Mo : P : Zr ratios in the initial solutions of 6 : 4 : 1 and 7 : 3 : 1 and pH values at the end of precipitation of 1.65 and 3.70 respectively.

2/2

- 22 -



1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--CHROMATOGRAPHIC SEPARATION OF SOME CATIONS OF ANALYTICAL GROUPS  
III, IV IN ZIRCONIUM PYROPHOSPHATE--U  
AUTHOR--(02)-PEREVOZLOVA, V.A., BOYCHINGVA, YE.S.  
COUNTRY OF INFO--USSR  
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(4), 794-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--ION EXCHANGE RESIN, CHROMATOGRAPHIC SEPARATION, ZIRCONIUM  
COMPOUND, PHOSPHATE, OPTIC PROPERTY, CADMIUM COMPOUND, MERCURY COMPOUND,  
COPPER COMPOUND, LEAD COMPOUND, SILVER COMPOUND, NICKEL COMPOUND, IRON  
COMPOUND, ZINC COMPOUND, AQUEOUS SOLUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/0963 STEP NO--UR/0080/70/043/004/0194/0798  
CIRC ACCESSION NO--AP0131548  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING A COLUMN PACKED WITH ZR PYROPHOSPHATE ION EXCHANGER, (CA 68: 72668A) 0.1-0.15 G (DRY WT.), THE SEPN. WAS STUDIED OF THE FOLLOWING CATION PAIRS (1-2 MG-ML.): CD PRIME POSITIVE POSITIVE, CU PRIME POSITIVE POSITIVE, PB PRIME POSITIVE POSITIVE, PB PRIME POSITIVE POSITIVE, HG PRIME POSITIVE, CD PRIME POSITIVE POSITIVE, AG PRIME POSITIVE HG PRIME POSITIVE, NI PRIME POSITIVE POSITIVE, FE PRIME3 POSITIVE, ZN PRIME POSITIVE POSITIVE, FE PRIME3 POSITIVE, CU PRIME POSITIVE POSITIVE. ADSORBED CATIONS WERE VISUALIZED IN THE COLUMN BY THE FORMATION OF THE COLORED COMPODS. WITH DIFFERENT ANAL. REAGENTS, WHICH IN SOME CASES ALSO SERVED AS ELUTING AGENTS. IN OTHER CASES FOR ELUTION EITHER AQ. SOLN. OF ACIDS OR BASES WERE ALSO USED. THE CHROMATOGRAPHIC SEPN. IS MAINLY AN ION EXCHANGE PROCESS.

UNCLASSIFIED

USSR

UDC 518.5:681.3.06

BOYCHUK, I. N., ROZENBERG, A. A.

"Solution of One Geometric Problem in the Automation of Program Preparation"

Sredstva Tekhn. Kibernet. [Engineering Cybernetics Equipment -- Collection of Works], Kiev, Tekhnika Press, 1970, pp 22-26, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V817, unsigned).

Translation: The preparation of programs for machine tools with programmed control is an extremely cumbersome process, particularly for parts with complex configuration, worked on milling machines. A set of problems must be solved which can be divided into technological (determination of types and sequences of processing, calculation of cutting modes, etc.) and geometric (calculation of trajectory of part processing). The study of blueprints of complex configuration parts to be subjected to mechanical working on a milling machine has shown that the contours of over 90% of parts are formed of combinations of two simple geometric elements -- straight line sectors and circular arcs. This article suggests a method for determination of the membership of the extreme points of a circular arc based on the utilization of a minimized Boolean function for reduction of the total number of all possible versions of arcs defined by various positions of the beginning and ending points of the arc to the minimum number of types. The article also presents an algorithm for determination of the extreme points suitable for realization on any universal computer.

USSR

UDC 621.332.6

BOYCHUK, L. M., KOSTENKO, Yu. V.

"An Analog Computer for Finding the Extremum of Functions of Many Variables"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326590, Division G, Filed 16 Nov 69, published 19 Jan 72, pp 181-182

Translation: This Author's Certificate introduces an analog computer for finding the extremum of functions of many variables in the presence of restrictions. The device contains integrators to which a control unit is connected, partial derivative modules, functional converters, and a relay. As a distinguishing feature of the patent, speed and accuracy are improved by including first and second control level modules in the control unit. The outputs of the first control level module are connected together with the inputs of the partial derivative modules and those of a functional converter to the outputs of the integrators. The output of the functional converter is connected to the relay winding, and the switching contacts of the relay are connected in a circuit between the outputs of the partial derivative modules and the inputs of the first and second control level modules. The outputs of these modules are connected to the inputs of the integrators.

1/1

USSR

UDC 681.332.4

BOYCHUK. L. M., KOSTENKO, Yu. V.

"An Analog Computer for Finding the Extremum of Functions of Many Variables"

USSR Author's Certificate No 326590, filed 19 Jan 72, published 21 Mar 72  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,  
Sep 72, Abstract No 9B449 P)

Translation: This Author's Certificate introduces an analog computer for finding the extremum of a function of many variables in the presence of constraints. The device contains integrators to which a control unit is connected, partial derivative modules, functional converters, and a relay. To increase precision and speed, the control unit contains blocks of first and second control structures. The inputs of the first of these blocks are connected together with the inputs of the partial derivative modules; those of the functional converter, to the outputs of the integrators; the output of the functional converter is connected to the relay winding. The switching contacts of the relay are connected in the circuit between the outputs of the partial derivative modules and the inputs of the blocks of first and second control structures, whose outputs are connected to the inputs of the integrators. Four illustrations.

1/1

BOYCHUK, L. M.

automatic  
control

THE FOURTH ALL-UNION CONFERENCE ON THE THEORY OF INVARIANCE  
AND THE THEORY OF SENSITIVITY OF AUTOMATIC CONTROL SYSTEMS  
(26-30 APRIL 1971, KIEV)

[Report by L. M. Boychuk and S. M. Chumakov, Kiev, Automatics  
Ukrainian, No. 6, 1971, pp. 77-79.]

20: JPR, 56092  
22 May 72

1-10000

6091A

In Kiev, from April 26 to 30 of this year, the Fourth All-Union Conference on the Theory of Invariance and the Theory of Sensitivity of Automatic Control Systems, organized by the Academy of Sciences of the USSR (Department of Mechanics and Control Processes), the Academy of Sciences of the Ukrainian SSR (Cybernetics Institute of the Ukrainian SSR Academy of Sciences), and the "Science" Association of the Ukrainian SSR (the Kiev structure of scientific and technological propaganda), was held. The conference covered summaries of the work of scientists and engineers for the period since the Third All-Union Conference (May-June 1966) and outlined new tasks regarding the development of theory and the application of these important scientific directions with the goal of further scientific and technical progress in the field of dynamics of the 24th CPSU Congress.

Nearly 500 delegates from 153 scientific institutions, enterprises, and colleges of various cities of the nation (Moscow, Leningrad, Kiev, Minsk, Baku, Sverdlovsk, Kharkov, Sevastopol, and others) took part in the conference. Participants heard over 100 reports and papers. The conference was chaired by Academician B. N. Petrov, whose deputies were O. I. Kukhtenko and O. G. Ivakhnenko, corresponding members of the Ukrainian SSR Academy of Sciences.

The conference began with a plenary session at which Academician B. N. Petrov made an introductory speech and the following reports were read: "Basic stages in the Development of the Theory of Invariance and the Theory of Sensitivity of Automatic Control Systems," by L. M. Boychuk, G. F. Zaytsev, O. G. Ivakhnenko, and P. I. Chynayev; "The

USSR

UDC 517.933

BOYCHUK, L. M., DUBROVIN, O. F.

"Polynomial (Finite-Difference) Description of Nonlinear Dynamic Objects With Incomplete Information"

V sb. Tekhn. kibernetika. Vyp. 2 (Technical Cybernetics. No. 2 -- Collection of Works), Kiev, 1970, pp 43-52 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B323)

Translation: A system with the control

$$x^{(n)}(t) = f(x(t), u(t), \lambda(t)), \quad (1)$$

is considered, where  $x(t) \in C^{(n)}[t; T]$  is the control output,  $u(t)$  is the input (control),  $\lambda(t)$  are uncontrolled perturbations. The function  $f$  is not completely defined analytically but it is assumed that it is possible to represent it in the form

$$f(x(t), u, \lambda) = \psi(x(t)) + \alpha(t)u(t) + \lambda(t).$$

A polynomial relationship

$$x(t + \tau) = P(x(t - j\tau); u(t - k\tau)) \quad (2)$$

1/2

USSR

BOYCHUK, L. M., DUBROVIN, O. F., Tekhn. kibernetika. Vyp. 2, Kiev, 1970, pp 43-52

is sought between the values of the output at the time  $t + \tau$  and the values of the input-output at previous times  $t - j\tau$  and  $t - k\tau$  ( $j = 0, 1, \dots, n$ ;  $k = 0, 1, \dots, l$ ), where  $n$  and  $l$  are given: i.e., there is proposed an approximate polynomial description (2) of the operation of a dynamic object (1). The problem of evaluating the error of the method is discussed. V. Demidovich.

2/2

- 3 -



USSR

UDC:

BOYCHUK, M. N., GAVRILOV, B. G., and VAULIN, V. YE.

"Frequency Stability of Self-Excited Oscillators of Ultrasonic Oscillations"

Kiev, Akustika i Ul'trazvukovaya Tekhnika, No 5, 1970, pp 45-52

Abstract: The authors study the effect of the active components of transistor emittances on the frequency stability of generators. Based on the analysis of a three-point self-excited oscillator, it was shown that the effect of the active emittances of an excitation circuit on the selective circuit can be significant and must be taken into consideration in calculations. Experimental results are given which support the theoretical position. Original article: five figures, 16 formulas, and 11 bibliographic entries.

1/1

- 70 -

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DAMPING DIURNAL VIBRATIONS IN SYSTEMS FOR AUTONOMOUS DETERMINATION  
OF COORDINATES -U-  
AUTHOR--BOYCHUK, O.F.  
COUNTRY OF INFO--USSR *B*  
SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEDHANIKA TVERDOGO TELA, MAR. APR.  
1970, P. 44-46  
DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--VIBRATION DAMPING, DIURNAL VARIATION, INERTIAL NAVIGATION  
EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0259

STEP NO--UR/0484/70/000/000/0044/0046

CIRC ACCESSION NO--AP0124021

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124021

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DAMPING OF DIURNAL VIBRATIONS IN AN INERTIAL NAVIGATION SYSTEM USING EXTERNAL INFORMATION WITH RESPECT TO LATITUDE AND HEADING. THE ASYMPTOTIC STABILITY OF THE EQUATIONS FOR AUTONOMOUS DETERMINATION OF COORDINATES IN THE PRESENCE OF DAMPING IS DEMONSTRATED. IT IS SHOWN THAT DAMPING OF DIURNAL VIBRATIONS BY USING INFORMATION WITH RESPECT TO HEADING GIVES RISE TO A CONTINUOUSLY INCREASING ERROR IN LONGITUDE, THE RATE OF INCREASE IN WHICH DEPENDS ON THE CONSTANT COMPASS ERROR AND ON THE DAMPING COEFFICIENT.

UNCLASSIFIED

USSR

UDC 539.385

GRINBERG, N. M., BOYCHUK, V. M., TSURIKOV, N. A., SOLOCUB, P. S., GLADKIKH, B. V., POPIRNYI, V. Ye., Khar'kov, Leningrad.

"Durability of Titanium Alloy in a Vacuum at Low and High Temperatures"

Kiev, Problemy Prochnosti, No. 4, Apr 71, p. 36-40.

Abstract: Results are presented from a study of the durability of titanium alloy under cyclical twisting in the range from 133 to 432°K under a vacuum of  $10^{-7}$  mmHg. A significant (approximately 7 times) increase in durability of unrolled specimens is discovered for loading under a vacuum in comparison with the same loading in air. When the surface is hardened by rolling, the vacuum has almost no influence on the durability of the alloy under cyclical deformation. An increase is noted in the durability of the alloy at low temperatures, as well as in increase in static strength under these conditions. The durability as a function of temperature above room temperature follows a complex curve. Certain specifics of the fatigue rupture are studied by electron microscopy and electron fractography. An attempt is made to explain the phenomenon observed.

1/1

USSR

UDC 669:539.43

BOYCHUK, V. M.

"MUVR and MUVK Fatigue Machines for Low Temperature Tests in a Vacuum"

Kiev, Problemy Prochnosti, No. 4, Apr 71, p. 53-55.

Abstract: The design of two fatigue machines for testing of specimens under axial loadings and torsion under a vacuum at low temperatures is described. The cooling system with liquid nitrogen and flexible cold conductors allows tests to be performed in a vacuum in the temperature interval from -160 to 150°C. The basic characteristics and design features of the evacuation, heat control and variable load measuring systems are presented.

1/1

BOYDENKO, V. S.

Methods of pressing in metallic dies ordinarily used leads to a significant lowering of the powder magnetic texture. This is caused by deformation of the material in one direction (in

- 1 - [1 - USSR - 1]

In recent years considerable successes have been achieved in the field of developing materials for permanent magnets owing to synthesis of compounds of the type  $RCo_5$  (where R is one of the rare-earth elements--yttrium or thorium), which possess extremely high values of the content of uniaxial anisotropy (in the order of  $10^7-10^8$  erg/cm<sup>3</sup>), for example, [1]. The process of manufacturing permanent magnets from such materials is reduced to grinding an alloy and compacting the resultant powder. Here, since due to the high value of anisotropy energy, the role of the magnetic interaction turns out to be insignificant and the powder can be compacted without substantial lowering of the coercive force, to a density close to the solid material. All the particles must be oriented prior to compaction to ensure that each particle is a single crystal and, consequently, magnetically uniaxial) and the compaction to be done in the axis of easy magnetization along one direction so as to create the magnetic structure. This can usually be achieved by means of planing the powder in a magnetic field. The main difficulty is in preserving the magnetic texture during the subsequent compaction of the powder [2].

PRODUCTION OF HIGHLY TEXTURIZED PERMANENT MAGNETS  
FROM MAGNETICALLY ANISOTROPIC POWDERS

Article by V. S. Shur, L. M. Magat, A. S. Yermolenko, N. A. Neshetnikov, V. S. Avdeyev, A. V. Delyagin, V. S. Boydenko, and Ye. V. Shcherbakova, Institute of Metal Physics, USSR Federation Academy of Sciences USSR, Sverdlovsk, Fizika Metallov i Metallovedeniye, Russian, Vol 35, No 2, 1973, submitted 13 December 1971, pp 422-424

JPRS 60499  
9 November 1973

USSR

UDC 669.71'74.472

KORNILOV, N. I., ILYUSHCHENKO, N. G., SOLOMATIN, V. Ye., and BOYDENKO, V. S.,

"Investigation of the Behavior of Mangarese and Aluminum in a Molten Mixture of Lithium and Potassium Chlorides in the Presence of Aluminum Fluoride"

Tr. In-ta elektrokhimii. Ural'skiy fil. AN SSSR (Works of the Institute of Electrochemistry. Ural Branch of the Academy of Sciences USSR), 1970, vyp. 15, pp 97-101 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 G244 by G. SVOOTSEVA)

Translation: Determinations were made of equilibrium electrode potentials of Al-Mn alloys (48-60 at.% Mn) relative to comparison Al-electrode at 693-873° K, and a study was also made of the kinetics of Al transfer to Mn in a eutectic mixture of KCl and LiCl with the addition of AlF<sub>3</sub> in contact with metallic Al. Measurement of the Mn-electrode potential in time makes possible quality control of the character of the resultant surface alloys. Five illustrations. Bibliography of 12 titles.

1/1

- 10 -

USSR

UDC 541.182.2/.3:616.21/.23-057]-084

RODIN, V. I., Professor, and BOYENKO, S. K., Otorhinolaryngology Clinic,  
Faculty of Advanced Training of Physicians, Donetsk Medical Institute imeni  
A. M. Gor'kiy

"The Effect of Electric Welding Aerosol on the Upper Respiratory Tract, and  
Preventive Measures"

Kiev, Zhurnal Ushnykh, Nosovykh i Gorlovykh Bolezney, No 5, Sep/Oct 70, pp  
1-4

Abstract: Examination of the upper respiratory tract in 334 electric welders with experience ranging from 1 to over 20 years revealed signs of chronic inflammation in 64%, accompanied by allergic manifestations in one-half of the cases. Edema of the nasal and laryngeal mucosa was common. These workers complained of frequent head colds, itching in the throat, and recurrent hoarseness. Some 22% of those with 10 years' experience or more also exhibited symptoms of subatrophic rhinopharyngitis. Recommended preventive measures include substitution of automatic or semiautomatic welding for manual welding, elimination of toxic electrodes, and improved general and local ventilation or the wearing of masks with a fresh air  
1/2



USSR

RODIN, V. I., and BOYENKO, S. K., Zhurnal Ushnykh, Nosovykh i Gorlovykh  
Bolezney, No 5, Sep/Oct 70, pp 1-4

supply. Workers with chronic inflammation of the upper respiratory tract generally improved significantly after 5 minutes' inhalation (20 times) of an aerosol consisting of sodium bicarbonate, sodium chloride, tincture of iodine, and distilled water (plus 1% ephedrine combined with 1% di-phenhydramine for those suffering from allergies).

2/2

- 81 -

1/3 029 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--SEASONAL ANOMALY IN THE F2 LAYER AND CORPUSCULAR RADIATION -U-

AUTHOR--BOYENKOVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOV, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 541-543

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--F LAYER, SOLAR CORPUSCULAR RADIATION, IONIZATION, SEASONAL  
VARIATION

CENTREL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0540

STEP NO--UR/0203/70/010/003/0541/0543

CIRC ACCESSION NO--AP0132727

UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132727

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEASONAL ANOMALY OF THE F2 LAYER IS MANIFESTED IN THAT THE MAXIMUM ELECTRON CONCENTRATION IN THE F2 LAYER IS NOT OBSERVED IN SUMMER BUT IN WINTER. MOST INVESTIGATIONS OF THE SEASONAL ANOMALY APPLY ONLY TO THE MIDDAY HOURS. THE SEASONAL ANOMALY IS NOT OBSERVED DURING THE NIGHTTIME AND PREDAWN HOURS. THIS PAPER EXAMINES THE BEHAVIOUR OF THE SEASONAL ANOMALY USING DATA FOR 120 STATIONS DURING THE PERIOD OF HIGH (1958) ACTIVITY AND USING DATA FOR 70 STATIONS FOR LOW ACTIVITY (1964). THE STUDY COVERED ALL HOURS OF THE DAY. IN 1958 IT WAS FOUND THAT REGIONS WITH THE GREATEST LIFETIME OF THE SEASONAL ANOMALY ARE CONCENTRATED IN NORTH AMERICA. THESE REGIONS (A AND B) HAVE A SEASONAL ANOMALY DURING BOTH DAYTIME AND NIGHTTIME. IN THE SOUTHERN HEMISPHERE, ON THE OTHER HAND, THERE ARE REGIONS (C AND D) WHERE THE SEASONAL ANOMALY IS ABSENT DURING ALMOST ALL HOURS OF THE DAY. THESE REGIONS ARE CONJUGATE. THE LOW LATITUDE B REGION COINCIDES WITH THE POSITION OF THE MAIN GEOMAGNETIC MAXIMUM F SUBO F2 (I EQUALS PLUS 30DEGREES) AND REGION A IS SITUATED WHERE THERE IS A NORTHERLY ADDITIONAL F SUBO F2 MAXIMUM (I EQUALS PLUS 70DEGREES). IN 1964 THERE WAS AN INCREASE IN THE AREAS OF THE WORLD WHERE THE SEASONAL ANOMALY WAS ABSENT. THIS INCLUDES ALMOST THE ENTIRE SOUTHERN HEMISPHERE, AS WELL AS SOME REGIONS IN THE NORTHERN HEMISPHERE. THE GREATEST DURATION OF THE ANOMALY DURING THE DAY IN 1964 WAS ONLY 12-16 HOURS, WHEREAS IN 1958 IT WAS 24 HOURS. A RELATIONSHIP BETWEEN F2 LAYER IONIZATION AND CORPUSCULAR STREAMS IS MANIFESTED IN THE PLANETARY DISTRIBUTION OF THE DURATION OF THE SEASONAL ANOMALY.

UNCLASSIFIED

3/3 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132727

ABSTRACT/EXTRACT--THIS STUDY OF THE PLANETARY DISTRIBUTION OF THE DURATION OF THE SEASONAL ANOMALY DURING THE COURSE OF THE DAY REVEALED THAT THE ABSENCE OF A SEASONAL ANOMALY, PARTICULARLY DURING THE PERIOD OF HIGH SOLAR ACTIVITY, HAS A LOCAL NATURE AND IN ALL PROBABILITY IS DETERMINED BY THE EFFECT EXERTED ON THE F2 LAYER BY CORPUSCULAR STREAMS.

FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION.

UNCLASSIFIED

BOYEV, A. V.

STUDY OF MORPHOLOGICAL AND PHYSIOLOGICAL CHANGES OF ALKANE-UTILIZING YEAST *CANDIDA TROPICALIS* IEPN-303 UNDER CONTINUOUS CULTURING

S. S. Piskin, V. E. Sterkin, L. V. Gurina, A. V. Boyev, L. A. Belova, I. M. Fokina.

The Institute of Biochemistry and Physiology of Microorganisms, USSR Academy of Science.

G14 15

COMPARATIVE S  
LANDS AND ON  
J. Phaff, M.  
University of C  
pan; Nagao In

The influence of continuous culturing on the morphology and physiology of alkane-utilizing yeast *C. tropicalis* IEPN 303 has been studied.

It has been shown that 1) under the condition of continuous culturing the decrease of the cell size takes place; 2) The physiological and biochemical features of a population changes, for example, assimilation of the maltose by the initial culture is preceded by the splitting of disaccharides to glucose. After the growth of the culture under continuous conditions this feature disappears; 3) with the increase of the growth rate in continuous conditions the total contents of the exchangeable pool of free intracellular amino acids and the quantity of its difference have been changed. When the  $D=0.15$  1/hr the contents of leucine, aspartic acid and lysine were equal to 4.83, 19.33 and 4.57 respectively, from the total contents of the exchangeable pool of free intracellular amino acids and when  $D=0.15$  1/hr the leucine, aspartic acid and lysine were equal to 11.91, 14.50 and 1.35; 4) the quality composition of lipids changes.

All these data confirm that the culture in continuous fermentation undergoes certain morphological and biochemical changes.

The purpos  
ated with tre  
ter Japanese  
Alaska, also  
ading Vancouver  
rity of the s  
curring on br  
plies in the  
rees. In addi  
attack by be  
Generally,  
to 5% salt a  
lected comp  
sterile water  
temperature 11  
added stuff  
the plates were  
nitrate was m  
east was pick  
were purified  
suitable facil  
small collec  
about a drop

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

Acc. Nr. AP0037014

B  
Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,  
Nr 2, pp 246-254

ELECTRICAL AND MECHANICAL ACTIVITY  
OF THE STOMACH SMOOTH MUSCLES IN CAT

By N. G. Kochemasova, M. F. Shuba, K. K. Boyev

From the A. A. Bogomoletz Institute of Physiology, Ukr. SSR Ac. Sci., Kiev  
and Institute of Physiology Bulgaria Acad. Sci., Sofia

The electrical and mechanical activity of the isolated circular smooth muscles of the cat antrum has been investigated by means of «sucrose gap». Three main types of the spontaneous action potential are observed at normal conditions: a) simple action potential without plateau, b) action potential with plateau, c) action potential with plateau and additional spikes on it.

The simple spontaneous action potentials of the circular smooth muscles in the cat antrum does not produce marked contraction in the muscle. The spontaneous action potentials which have plateau are accompanied by pronounced phase muscle contraction. Strength and duration of the muscle contraction depends on the rise speed and size of the initial depolarisation phase of action potential and size of the plateau and presence of additional spikes on it.

42

REEL/FRAME  
19721949

2

AP0037014

Contraction in muscle cells begins when the depolarisation phase of action potential reaches its peak.

Adrenaline produced hyperpolarization, decrease both in the initial spike part and in the plateau of action potential and depression of contraction. The acetylcholine influence is accompanied by opposite changes in spontaneous activity.

D. n.

19721950

2/2

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CLINICO MORPHOLOGICAL PARALLELS IN HAND AND MECHANICAL SUTURES OF  
THE PERIPHERAL NERVES -U-  
AUTHOR-(03)-PERMYAKOV, N.K., BOYEV, YU.M., SUSLOV, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZOLOGIYA, 1970, NR 3, PP  
40-44  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--NERVOUS SYSTEM, SURGERY, SUTURE, NATURAL FIBER, TANTALUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0916 STEP NO--UR/0481/70/000/003/0040/0044  
CIRC ACCESSION NO--AP0126575  
UNCLASSIFIED



2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF TWO METHODS OF NERVE SUTURE, THE MECHANICAL TANTALUM AND THE HAND SILK SUTURES, UNDERTAKEN ON 24 DOGS HAS SHOWN THAT AFTER THE MECHANICAL SUTURE IN 3-6 MONTHS THERE IS RESTORATION OF STRUCTURE BOTH OF THE CENTRAL AND OF THE PERIPHERAL ENDS OF THE NERVE AT THE EXPENSE OF THE INGROWTH OF NEUROFIBRIL FROM THE CENTRAL INTO THE PERIPHERAL ENDS OF THE NERVE. AFTER HAND SUTURE NO SUCH RESTORATION OF THE NERVE STRUCTURE IS SEEN AND ONLY THIN, SINGLE NEUROFIBRILS REACH THE PERIPHERAL END OF THE NERVE, THROUGH THE SUTURE AREA. CLINICAL DATA SHOW THAT COMPLETE RESTORATION OF NERVES AFTER THE TANTALUM MECHANICAL SUTURE IS SEEN TWICE AS RAPIDLY AS AFTER THE HAND SILK SUTURE. FACILITY: KHIRURGICHESKAYA KLINIKA NR 4 I PATOLOGCANATOMICHESKOYE OTDELENIYE NAUCHNO-ISSLED. INSTITUTA SKORGY POMOSHCHI IM. N. V. SKLIFOSGVSKOGO, MOSKVA.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--090CT70  
TITLE--COMPARATIVE CHARACTERISTICS OF ELECTRO STIMULATION OF THE SCIATIC  
NERVE IN HAND AND MECHANICAL SUTURE IN EXPERIMENT -U-  
AUTHOR-(02)-BOYEV, YU.M., UYNATANOV, B.S.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP  
55-57

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NERVE TISSUE, NERVE REGENERATION, SPINAL NERVE, SUTURE,  
TANTALUM, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0638

STEP NO--UR/0481/70/000/002/0055/0057

CIRC ACCESSION NO--AP0108849

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108849

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPEDIENCY OF USING MECHANICAL EPINEURAL SUTURE WITH THE AID OF A SPECIAL APPARATUS FOR NERVE SUTURE IS BEING CONSIDERED. EXPERIMENTS WERE DONE ON 12 DOGS. IN 6 DOGS A SECTIONED NERVE WAS SUTURED BY HAND SILK EPINEURAL SUTURE AND IN 6 DOGS, BY TANTALUM STAPLING MACHINE. ELECTROSTIMULATION OF THE NERVE BY CHRONAXIMETRY WAS TESTED PRIOR TO NERVE SECTION AND AFTER ITS SUTURE 14 AND 30 DAYS LATER. THE RESULTS SHOW THAT RESTORATION OF ELECTROSTIMULATION IS 2.5 TIMES QUICKER AFTER MECHANICAL SUTURE, WHICH SPEAKS FOR ITS ADVANTAGES AS COMPARED WITH THE HAND SUTURE. FACILITY: 4-YA KHIRURGICHESKAYA KLINIKA AND PATOFIZIOLOGICHESKAYA LABORATORIYA INSTITUTA SKOROY POMOSHCHI IM. N. V. SKLIFOSOV, MOSCOW.

UNCLASSIFIED

USSR

UDC 619:616.988.43

BOYKO, A. A.; SHULYAK, F. S.

Moscow, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy (Foot-and-Mouth Disease. Biological and Ecological Aspects of the Problem), "Kolos," 1971, 352 pp

Translation: Introduction: To this date foot-and-mouth disease remains the scourge of the livestock breeding industry. Reduced productivity and losses incurred in the value of animals which recover from the disease are sources of constant anxiety. This is particularly true of the malignant form of the disease, when 60-70% of adult animals perish. Mass outbreaks of the usual form of the disease among young stock (calves, lambs, and young pigs) are also noted during the first days of life.

To these direct losses should be added the considerable funds expended on quarantine and other veterinary sanitation measures, such as disinfection, vaccination, and medical preparations. Legal restrictions limit agricultural activities in regions and

1/12

- 111 -

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiiy Aspekt Problemy, 1971. 352 pp

countries unsafe with respect to foot-and-mouth disease, and prevent free trade in livestock and products of animal husbandry.

The complexity of the struggle against epizootic outbreaks of foot-and-mouth disease is complicated by the fact that some populations of the virus in the presence of susceptible animals spread in a relatively brief period of time over tremendous territories. This tendency to wide dissemination is linked with three characteristics of this virus: (a) an adequately high degree of preservation on environmental objects; (b) the ability to develop and induce the disease not only in one but several species of animals; and (c) various ways and methods of transmission.

The large number of epizootic outbreaks of foot-and-mouth disease which occurred in different parts of the world in the past and during this century did not pass unnoticed by science. They were objects of study by scientists of different institutes

2/12

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiiy Aspekt Problemy, 1971, 352 pp

and experimental stations. As a result much as been learned about foot-and-mouth disease virus, its morphological and biological properties, and its stability in the environment. Methods of eradication have been developed. Considerable knowledge has been gained on the pathogenesis of the disease, routes of the entry of the agent into the organism of susceptible animals, distribution of the virus throughout the organism, propagation and excretion into the environment. To some degree the immunogenesis of the virus has been decoded, and specific biological preparations against the disease have been proposed.

Considerable successes have been achieved in culturing foot-and-mouth disease virus in tissue cultures in vitro, and laboratory sensitive animals -- guinea pigs, suckling white mice, newborn rabbits, and others -- have been selected. Considerable improvement has been made in laboratory diagnosis of the disease, and particularly in methods of typing the virus. A complex of

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

veterinary sanitation measures combined with specific drugs has been developed. All of this creates a real basis for the elimination of foot-and-mouth disease in the Soviet Union.

And still much about the virus remains unknown, and the prophylactic methods in use need further improvement. Efforts will continue until the problem of foot-and-mouth disease is solved. The primary source and main reservoir of foot-and-mouth disease virus in nature is the diseased farm animal.

Each new case in farm animals (cattle, swine, sheep, and goats) becomes a source of the virus in secretions and excretions, even prior to the appearance of clinical symptoms. Later, large quantities of the virus are disseminated with contents of the ruptured ulcers and with the epithelium from the mucous membranes and the skin.

4/12

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

In massive contamination of bodies of water, fodder, pastures, wool, extremities of nonsusceptible domestic animals, objects used in the care of animals, and footwear and clothing of people, conditions are created in which the virus may survive, and under favorable conditions, be transmitted to other susceptible animals.

It has been experimentally established that an animal does not excrete a virus of identical activity in all stages of the infectious process. As the infection process begins to wane, the infectiousness of the secretions and excretions becomes attenuated and disappears. Nevertheless, there are considerable literature data on the virus carrier state in animals recovered from foot-and-mouth disease.

Despite the fact that at present the mechanism of transmission, periods, and significance of transmission of the virus are still under discussion, epizootic studies conducted by a number of

5/12

- 116 -



USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

authors showed that transmission of the virus by animals recovered from foot-and-mouth disease for several months (up to a year) to a farm with healthy animals is an indisputable fact.

The paramount role of diseased animals in the origin and course of epizootics of foot-and-mouth disease results not only from the active dissemination of the virus in the immediate environment, but also from the fact that the virus can be transported with infected products of the livestock breeding industry: meat, milk, wool, skin, etc. to areas far beyond epizootic foci.

With the use of modern equipment (refrigerators, refrigerated cars, and others) it is possible to create conditions for the prevention of product spoilage. However, these conditions are highly favorable also for the preservation of vital functions of the virus.

6/12

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

In 1961, during a serious outbreak of an epizootic of foot-and-mouth disease in Orenburg Oblast, infection of animals as a result of consumption of non-treated skimmed milk received from dairy plants was observed. Two special features regularly marked the development and spread of the disease in these cases. The first feature was the simultaneous outbreak of the disease at a number of farms receiving this milk; the second feature, the fact that young stock (young pigs and calves) fed the milk were stricken first, and older animals a few days later.

With modern means of transportation (railways, air transport, waterways) and extensive trade within the USSR and between countries, the agent of foot-and-mouth disease may appear within a short period of time at a considerable distance from its previous habitat. This circumstance required particular vigilance on the part of veterinary workers.

7/12

- 117 -

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

The variety of ways in which foot-and-mouth disease can be transmitted has been confirmed by a number of reliably established cases, in which animals vaccinated with smallpox lymph and sera were infected with foot-and-mouth disease. Mohler and Rosenau, for instance, described an outbreak of foot-and-mouth disease in the United States in 1908 after vaccination with smallpox lymph received from Japan. An analogous outbreak in Hungary in 1917 was described by F. Gutira and R. Malek (1937) in Hungary. They reported also an outbreak of foot-and-mouth disease in Chicago in 1915 among hogs vaccinated with serum against hog cholera.

Rous (1956), anxious about conditions in Australia, which for a period of several decades had been free of foot-and-mouth disease, considered the real possibility of transmitting the agent of foot-and-mouth disease by a letter written by someone in contact with diseased animals and sent to a person caring for

8/12

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiiy Aspekt Problemy, 1971, 352 pp

susceptible animals in Australia. Taking this possibility into consideration during an outbreak of foot-and-mouth disease in Great Britain, a recommendation was made in Ireland in 1967 that all New Year congratulatory cards received from Great Britain should be burned.

The literature contains a large number of reports on the spread of foot-and-mouth disease by fowl, horses, dogs, and cats, animals resistant to natural infection. There are also scattered data on the transmission of the agent by a large group of freely migrating organisms, such as insects, ticks, rodents, migrating birds, wild Artiodactyla, etc. Their participation in the development of foot-and-mouth disease is always suspected when the origin of an outbreak remains undetermined.

Considerable attention is also given to man's role in unconsciously spreading the disease.

9/12

- 118 -

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

The sections of the book dealing with the agent of foot-and-mouth disease, its epizootic outbreaks, foot-and-mouth control measures in the USSR and foreign countries were written by A. A. Boyko. The sections concerning the role of wild ungulates, rodents, birds, insectivora, insects, ticks, cold-blooded animals, and Protozoa in spreading foot-and-mouth disease were written by F. S. Shulyak.

Table of Contents

	<u>Page</u>
Introduction	3
Agent of the Disease	7
Stability of the Virus	10
Trophism of the Virus	14
Invasive Properties of the Virus	16
Infectious Properties of the Virus	17
Immunobiological Properties of the Virus	19

10/12

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

Principles of Preservation of the Virus in Nature	25
Concerning the Evolution of Virus Populations	67
Concerning Epizootic Outbreaks of Foot-and-Mouth Disease	103
Role of Wild Ungulates in the Spread of Foot-and-Mouth Disease	118
Role of Rodents in the Spread of Foot-and-Mouth Disease	169
Role of Birds in the Spread of Foot-and-Mouth Disease	210
Role of Insectivora in the Spread of Foot-and-Mouth Disease	235
Role of Insects and Ticks in the Spread of Foot-and-Mouth Disease	252
Role of Cold-Blooded Animals and Protozoa in the Spread of Foot-and-Mouth Disease	284
Foot-and-Mouth Disease Control Measures in Foreign Countries	298
11/12	

USSR

BOYKO, A. A., et al, Yashchur. Biologo-Ekologicheskiy Aspekt Problemy, 1971, 352 pp

Foot-and-Mouth Control Measures Implemented in the USSR	
Measures Upon the Appearance of Foot-and-Mouth Disease	314
Measures in a Focus of Foot-and-Mouth Disease	318
Measures Implemented Prior to the Removal of the Quarantine	324
Bibliography	331
	334

12/12

Acc. Nr:

AP0048472

Abstracting Service:  
CHEMICAL ABST. 570

Ref. Code:

UR0070

104822x Thermal expansion of ammonium dihydrogen phosphate and deuterated ammonium dihydrogen phosphate in the region of the antiferroelectric phase transformation. Boiko, A. A.; Golovnin, V. A. (Inst. Fiz. Tverd. Tela, Chernogolovka, USSR). *Kristallografiya* 1970, 15(1), 186-9 (Russ). Spontaneous deformation of the unit cell of  $\text{NH}_4\text{H}_2\text{PO}_4$  (ADP) and  $\text{ND}_4\text{D}_2\text{PO}_4$  (DADP) single crystals near their paraelec.-antiferroelec. phase transitions were studied by x-ray diffraction. The temp. dependences of the lattice consts. ( $a$ ,  $b$ ,  $c$ ), coeff. of thermal expansion ( $\alpha_1$ ,  $\alpha_2$ ,  $\alpha_3$ ), and coeff. of vol. thermal expansion  $\beta$  were deduced from the (10.00), (0.10.0), and (008) reflections. A temp. hysteresis of  $\sim 2^\circ$  was established at the phase transitions of ADP and DADP at  $\sim 150^\circ$  and  $\sim 235^\circ\text{K}$ , resp. In the paraelec. phase of ADP and DADP,  $\alpha_1$  decreases and  $\alpha_3$  increases with decreasing temp; near the  $T_c$  their common value is  $\sim 20 \times 10^{-6}$  degree $^{-1}$ . Discontinuous pos. and neg. changes of  $\alpha_2$  and  $\alpha_1$ , resp., were obsd. at the  $T_c$ . In the antiferroelec. phase  $\beta$  is anomalously low even at  $\sim 40^\circ$  below the  $T_c$  while both  $\alpha_1$  and  $\alpha_2$  in the paraelec. phase behave anomalously only  $\sim 1-2^\circ$  above the  $T_c$ .  
P. Glogar

1/1

REEL/FRA  
19800180

187t



USSR

UDC: 669.295.48.053.4

LISKOVICH, V. A., MEYERSON, G. A., BOYKO, A. I., KANYUK, A. I.

"Processing of Untreated Titanium Alloy Wastes by the Hydrogenation-Hydrometallurgy Method"

Moscow, Tsvetnyye Metally, No 7, Jul 73, pp 38-41.

Abstract: The expediency and economic effectiveness of the use of combined modes of leaching of the products of hydrogenation of untreated titanium alloy wastes with solutions of nitric acid and caustic alkali for extraction of aluminum, vanadium and molybdenum into solution before final electric refining are demonstrated. The alloying elements were extracted from the hydrogenation products by leaching in a heated ball mill. The combination of the grinding action of the balls with the chemical action of the reagents intensifies the process. The optimal extraction conditions were found to be: mill rotation rate 80% of critical, liquid:solid ratio 20:1, ball load 30% of mill volume. The total economic effect of the recovery process is 546 rubles per ton of powder, or 331 rubles per ton of titanium waste.

1/1

- 56 -

USSR

UDC 669.295.43

SMIRNOV, Yu. R., LISKOVICH, V. A., KHAVSKIY, N. N., MEYERSON, G. A., BOYKO, A. I.

"Some Results of Investigation of Application of Ultrasound in Hydrometallurgical Processing of Titanium Alloy Wastes"

Primeneniye Ul'trazvuka v metallurg. Protssessakh [Use of Ultrasound in Metallurgical Processes -- Collection of Works], Moscow, 1972, pp 98-102, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G267 by the authors)

Translation: Results are presented from studies of combined reagent modes of leaching of primary Ti-Al-V alloy hydride with the application of US oscillations. The duration of the process and temperature decrease in comparison with leaching in an ordinary tank. However, the ultrasound causes undesirable overfine breakdown of some portion of the solid phase, hindering further treatment of the suspensions. 3 Figures; 2 Tables; 4 Biblio. Refs.

1/1

USSR

BOYKO, A. I., and LISKOVICH, V. A.

"Determining Oxygen Content in Titanium Hydride"

Moscow, Zavodskaya Laboratoriya, Vol 36, No 11, 1970, pp 1327-1329

Abstract: The results are presented of an investigation of the oxygen content in titanium hydride by the vacuum-melting method. Samples with a known oxygen content were analyzed in order to determine the behavior of the oxygen dissolved in titanium under conditions ensuring the evacuation of hydrogen from titanium hydride. The vacuum-melting method was used at 900°C. It was established that no interaction takes place with dissolved oxygen at 900°C and at a  $2.10^{-4}$  mm Hg residual pressure. The experimental setup is shown schematically, and the preparation of samples and the testing procedure are described. The oxygen content in the samples was determined by the formula  $C = Vx \Delta P x 0.026 / (273 + t^{\circ})$ , where C is the oxygen content in wt%, V is the gas volumeter volume in l/2

- 69 -

USSR

BOYKO, A. I., and LISKOVICH, V. A., Zavodskaya Laboratoriya, Vol 36, No 11, 1970, pp 1327-1329

milliliters  $\Delta P$  is the CO<sub>2</sub> pressure in mm Hg; and 0.026 is a coefficient. The mean square analysis error is 0.008-0.01% at an oxygen content  $\leq$  0.1% and 0.001-0.045% at a 0.1-0.5% oxygen content. Titanium-hydride samples with an oxygen content of 0.067-0.05% and higher were analyzed by this method.

2/2

Acc. Nr:

AA0108685

BOYKO A.I.

Ref. Code:

UR 0482

Abstracting Service: 3 70

Soviet Inventions-Illustrated, Section I Chemical, Derwent,

[ 244360 SURFACE HARDENING is preceded by heating to below re-crystallisation point to improve fatigue strength. This is done by a transformer (1), roller electrode (2) and hardening roller (3) fitted on a lathe support. The electrode rollers ride ahead of the hardener at a speed governed by the heating time of the particular surface. This resistance heating principle gives an easily adjusted schedule by current control systems.

22.1.68 as 1213133/22-1. BEGAGOEN.I.A., P.A.RUDENKO, A.I. BOIKO et al. KRIVOI ROG MINING INST. (23.10.69) Bul 18/28.5.69. Class 18c. Int.Cl. C 21 d.

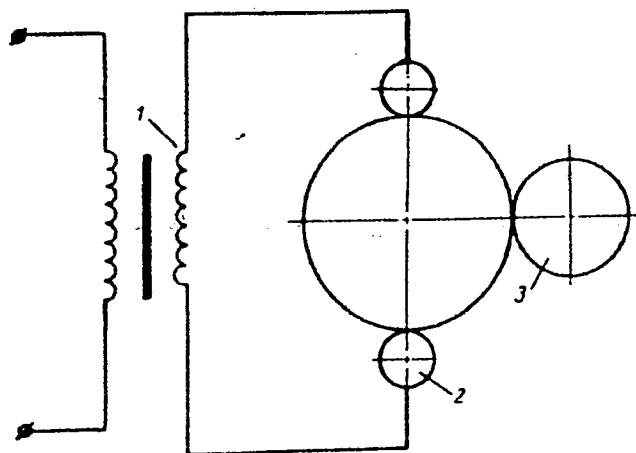
1/3

18

REEL/FRAME

19900399

AA0108685



2/3

19900400

BS

A0108685

AUTHORS: Begagoyen, I. A.; Rudenko, P. A.; Boyko, A. I.;  
Antonyuk, O. I.

Krivorozhskiy Gornorudnyy Institut

3/9

19900401

Extraction and Refining

USSR

UDC 669.295.3.82

MEYERSON, G. A., LISKOVICH, V. A., and BOYKO, A. I., Moscow, Zaporozh'ye

"Investigation of the Hydrometallurgical Reprocessing of Wastes of Titanium Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 44-49

Abstract: With reference to previous investigations on hydrogenation of titanium materials (Rubtsov, A. N., et al., "Naukova Dumka", 1971; Olesov, Yu. G., et al., "Tsvetnyye Metally", 1967, No 2), results of further studies on the reprocessing of off-grade wastes of titanium alloys by the hydrogenation-hydrometallurgy method are discussed. Effects of technological factors on the degree of recovery of Al, V, and Mo in the leaching process of hydrogenation of binary, ternary, and industrial VT6 and VT8 titanium alloys are investigated. Favorable effects of prehydrogenation and of leaching the wastes of VT6 alloy on the indices of subsequent electrolytic refining are ascertained. Five tables, ten bibliographic references.

1/1



USSR

UDC 629.7.015

KOZHEVNIKOV, YU. V., TALYZIN, V. A., BOYKO, A. N.

"Craft Optimization in an Independent Test Program"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 14-21

Abstract: The article deals with the problem of optimization of the program of motion of a two-stage craft that is being delivered to a given flight-range segment  $[l', l'']$  in accordance with the following criteria: a) maximization of the probability of a successful outcome of not less than  $m$  craft launchings in a series of  $n$  ( $n \geq m$ ) launchings; b) maximization of the probability of exactly  $m$  successful arrivals of the craft in a series of  $n$  ( $n \geq m$ ) launchings. The necessary optimality conditions in the problems are obtained by methods of the theory of optimal averaging of the controls. An algorithm for numerical solution of the problem is compiled. The results of optimization of the movement program of a single-stage craft in accordance with criteria a) and b) are presented as an example. 2 tables, 2 figures, 4 bibliographic entries.

1/1

- 9 -

USSR

UDC 546.185

KUKHAR', V. P., BOYKO, A. P., ZOLOTAREVA, L. A., and KIRSANOV, A. V.,  
Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Trichlorophosphazoperchloroethane in the Friedel-Crafts Reaction"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 281-283

Abstract: The authors study the catalytic activity of Lewis acids in the Friedel-Crafts reaction. In the reaction of trichlorophosphazoperchloroethane with benzene, the catalytic activity of Lewis salts decreases in the order  $\text{SbCl}_5 > \text{AlCl}_3 > \text{FeCl}_3 > \text{SnCl}_4 > \text{TiCl}_4$ . In the case of toluene, the reaction proceeds somewhat more readily in the presence of  $\text{SbCl}_5$ , while chlorobenzene reacts less readily than benzene with this catalyst. The reaction of trichlorophosphazoperchloroethane with other organic solvents in the presence of Lewis acids leads to resin formation and difficulty in isolating the corresponding trichloromethylketones. N-Dichlorophosphonyliminotrichloroacetyl chloride reacts much more slowly with benzene in the presence of antimony pentachloride than does trichlorophosphazoperchloroethane with a much lower yield of trichloroacetophenone.

1/1

- 30 -

USSR

UDC: 539.374: 669.3: 662.75

AKSENOV, A.F., BOYKO, A.S. and IVZHENKO, I.P.

"Effect of Aviation Fuels on Plastic Deformations of Copper and  $\alpha$ -Brass"

Sb. nauch. tr. Kiev, in-t inzh. grazhd. aviatsii (Symposium of Scientific Works of Kiev Institute of Civil Aviation Engineers) 1971, vyp 2, pp 67-69 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 7, 1972, Abstract No 7.34.107)

Translation: Strengthening of copper and  $\alpha$ -brass with monoaxial tension in the mediums of T-1 and T-7 fuels, air and active-absorption medium-vaseline oil + 0.2% of oelic acid was investigated. Microhardness, measured by PMT-3 instrument served as criterion of strength. T-1 fuel and vaseline oil + 0.2% of oleic acid was investigated. Microhardness, measured by PMT-3 instrument served as criterion of strength. T-1 fuel and vaseline oil + 0.2% of oelic acid strengthen copper and  $\alpha$ -brass by equal amounts and less (by about 20-30%) than T-7 fuel and air (2 illustrations, 6 references, resume).  
1/1

- 103 -

Acc. Nr.:

AP0032019

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 99-101

SUMMARY  
HISTOSTRUCTURAL CHANGES OF THE DIAPHRAGMATIC NERVE  
IN DISTURBANCES OF ITS BLOOD SUPPLY

Boyko, A.V. (Lvov)

Experimental histopathological investigations in rabbits indicate that unilateral ligation of the ascending cervical and internal mammary artery results in development of severe desintegrative processes in the diaphragmatic nerve. The pathological changes were found to be more marked in the cervical part of the diaphragmatic nerve than in the thoracic, the latter possessing more favourable conditions for restoration of anastomosis, blood supply of the nerve.

mk

2

REEL/FRAME

19700171

USSR

UDC: [621.392:538.4]:662.215.2(088.8)

PAVLOVSKIY, A. I., LYUDAYEV, R. Z., YURYZHEV, A. S., BOYKO, B. A., SEREGIN, A. S.

"A Magnetoexplosive Generator"

USSR Author's Certificate No 243103, filed 28 Nov 67, published 10 Mar 70  
(from RZh-Elektrotehnika i Energetika, No 10, Oct 70, Abstract No 10A148 P)

Translation: This Author's Certificate introduces a magnetoexplosive generator for converting the energy of an explosive material to electromagnetic energy. The device contains a tube filled with an explosive material and a coaxially arranged helix. The tube and helix are connected at one end to a heat source, and at the other to a toroidal inductive cavity. To increase the coefficient of energy conversion, the generator tube is made in the form of a truncated cone with the wider base toward the inductive cavity. The diameter of the wide base, the diameter of the narrow base, and the height of the cone are in the ratio of 2:1:4. One illustration.

1/1

USSR

UDC 621.385.017.72:536.58(088.8)

BAKEYEV, P.B., BOYKO, B.I., ITUNIN, L.L., SERBINOV, A.M., KROMCY, YU. D.

"Unit For Control Of The Temperature Of Electrovacuum Devices"

USSR Author's Certificate No 262527, filed 2 Dec 68, published 13 May 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A113P)

Translation: A unit is proposed for control of the temperature of electrovacuum devices, which contains a curved thermosensitive plate acting on the regulating organ for the flow rate of a coolant flowing in a spiral which encircles the body of the device. At the extremes of the coils of the spiral, two intermediate plates are attached at the outer extremity of which the thermosensitive plate is secured and at the inner, fixed screws for adjustment of the moment of turning on of the regulating organ. Such construction of the device assures production of a signal proportional to the average temperature of the body. G.B.

1/1

USSR

UDC: 621.3.085.3

BOYKO, B. N., KRIVENKO, V. G., Special Design Office of Biological Instrument Building, Academy of Sciences of the USSR

"A Device for Displaying Arabic Numerals on the Screen of an Oscilloscope"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328489, Division G, filed 28 May 70, published 2 Feb 72, p 165

Translation: This Author's Certificate introduces a device for displaying arabic numerals on the screen of an oscilloscope. The device contains two mixers, a matrix, keystone scanning voltage shapers based on integrating amplifiers, and polarity selectors comprised of an inverter and two switches. As a distinguishing feature of the patent, the clarity of the images is improved and the circuit is simplified by equipping each keystone scanning voltage shaper with upper-level and lower-level fixing devices connected in the feedback circuit of the integrating amplifiers. The outputs of the ballast resistors of each pair of fixing devices are connected to the set terminals of two flip-flops whose one-output terminals are cross-connected to the inputs of the shapers. The output of the

1/2

USSR

BOYKO, B. N., KRIVENKO, V. G., USSR Author's Certificate No 326489

first shaper is connected through a switch and also through an inverter and a second switch to the inputs of the first mixer. Both switches are connected to the outputs of a third flip-flop, whose counting input is connected to the one-output terminal of the first flip-flop. The inputs of the second mixer are connected to the outputs of the second shaper and the output of the first mixer.

2/2

- 5 -



USSR

UDC 681.142.624:506.2

BOYKO, B. N., SHMAKOV, A. K.

"Instrument for Automatic Computation of the Distribution Density Function of Microscopic Objects in Terms of Their Diameter"

Patent No. 327470 (1334551/26-25 from 3 June 1969), Class G06f 5/00 announced by the Special Design Bureau of Biological Instrument Building (from Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 5, 1972, p 138)

Abstract: A device for the automatic calculation of the distribution density function of microscopic objects in terms of their diameter which contains a scanning microscope, a delay line, and a scheme for determining the end of the microscopic object is described. The device is distinguished by the fact that it includes a multichannel counter to increase the accuracy of the calculations and give greater clarity to the results and also includes a second delay line and a circuit for the comparison of the durations of the video pulses, where two inputs of the multichannel counter are connected respectively with the output of the first delay line and the output of the comparison circuit, which is connected with the inputs and the output of the second delay line; and to the input and the output of the first delay line there is connected a circuit for the comparison of the durations of the video pulses, the output of which is connected with the control circuit.

1/1

Acc. Nr. **AP0054926**

Abstracting Service: **G-70**  
INTERNAT. AEROSPACE ABST.

Ref. Code:

**4R0181**

**Boiko B.T.**

A70-25381 # Intermediary graphitization stages in thin films of a condensed carbon (Promezhutochnye stadii grafitizatsii v tonkikh plenkakh kondensirovannogo ugleroda). B. T. Boiko, L. S. Palatnik, A. S. Derevianchenko, and A. A. Nechitailo (Khar'kovskii Politekhnikeskii Institut, Kharkov, Ukrainian SSR). Fizika Tverdogo Tela, vol. 12, Feb. 1970, p. 492-498. 24 refs. In Russian.

Electron diffraction study of carbon films obtained by using an electron beam technique involving condensation in vacuum on an unheated substrate. It is found that the film consists of aggregates of oriented and nonoriented coherent scattering regions bonded by disoriented carbon aggregates. Both oriented and nonoriented coherent scattering regions are formed by parallel packed graphite lattices. Large interlattice distances in these blocks indicate on characteristic to graphite impairments in the mutual orientations of the parallel lattices. This impairment is due to the insertion of carbon atoms between the lattices and formation of disordered, strongly supersaturated solid solutions.

Z.W.

REEL/FRAME  
**19840130**

CK

18

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CHANGE IN THE STRUCTURE OF THE BOUNDARY OF BINARY GOLD PALLADIUM  
FILMS DURING DIFFUSION ANNEALING -U-  
AUTHOR--(02)-BOYKO, B.T., LEBEDEVA, M.V.  
COUNTRY OF INFO--USSR *B*  
SOURCE--FIZ. METAL METALLOVED. 1970, 19(3), 603-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--ANNEALING, GOLD ALLOY, PALLADIUM ALLOY, SURFACE FILM, METAL  
FILM, METAL DIFFUSION, SOLID SOLUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0934 STEP NO--UR/0126/70/029/003/0603/0607  
CIRC ACCESSION NO--AP0121536  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121536

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN COMPLEX BINARY AU-PD FILMS WITH AN OVERLAP BAND, DURING ANNEALING, SURFACE DIFFUSION IS ATTENUATED, AND ON THE BOUNDARY OF THE AU SOLID SOLN. (50 AT.PERCENT) FILMS, ISOLATED PARTICLES OF SOLID SOLN. FORM WITH A SIZE 2 ORDERS OF MAGNITUDE GREATER THAN THE THICKNESS OF THE FILM. THE OBSD. CHANGES IN THE STRUCTURE OF THE BOUNDARY ARE CAUSED BY THE FORMATION ON THE SURFACE OF THE FILMS OF THIN LAYERS DUE TO THE POLYMN. OF ADSORBED VAPORS OF THE DIFFUSION PUMP OIL, AS WELL AS BY THE RELAXATION OF THE STRESSES FORMED DURING BULK DIFFUSION. FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.961

REUTOV, A. P., MIKHAYLOV, B. A., KONDRATENKOV, G. S., BOYKO, B. V.

"Sidelooking Radar Stations"

Radiolokatsionnyye stantsii bokovogo obzora (cf. English above), Moscow, "Sov. radio", 1970, 360 pp, ili. 1 r. 15 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G2 K)

Translation: The authors discuss the theory of operation of airborne sidelooking radar stations designed to give detailed radar images of surroundings. Methods are demonstrated for improving radar resolution. Two types of sidelooking radar are examined in detail: with antenna located along the fuselage, and with artificial antenna aperture. A survey is given of information published in the literature relating to the principles of sidelooking radar design and the peculiarities of sidelooking radar mapping. Attention is given to a number of fundamental differences between sidelooking and conventional radar. 170 illustrations, 5 tables, bibliography of 106 titles. Resumé.

1/1

USSR

UDC 621.983

OVCHINNIKOV, A. G., BOYKO, E. I., BOYKO, S. V.

"Study of Cold Heading with Ultrasound"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1973,  
pp 127-129.

Abstract: The problem of the use of ultrasound as an activating factor during cold heading is studied. It is demonstrated that the use of ultrasound increases the ductility of the material and reduces the static deformation force required. Also, the use of ultrasound facilitates softening of the material and decreases residual stresses.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--MODIFIED CAST IRON FOR THIN SECTION CHILL CASTINGS -U-

AUTHOR--(02)-KOLESNICHENKO, A.G., BOYKO, G.G.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZV., MAR. 1970, (3), 31

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, CRYSTAL LATTICE STRUCTURE, REFRACTORY MATERIAL,  
INDUCTION FURNACE, SURFACE PROPERTY/(U)SCH1532 CAST IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1924

STEP NO--UR/0128/70/000/003/0031/0031

CIRC ACCESSION NO--AP0132186

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132186

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARATIVE DATA ARE REPORTED FOR CASTINGS (MAX. DIMENSION 20 MM, PRODUCED IN PARALLEL SERIES OF TESTS WITH AND WITHOUT MODIFICATION WITH SI75 0.5-1.0PERCENT, AND OR KASII AND AL) FROM SCH 15-32 CAST IRON, CONTG. C 3.0-3.2, SI 2.0-2.2, MN 0.7-0.9, P 0.09-0.12, S 0.04-0.06PERCENT. AFTER MELTING IN AN INDUCTION FURNACE, THE IRON WAS TAPPED INTO A 1 TON LADLE AT 1400 DEGREESC AND POURED AT 11280-1300 DEGREESC INTO FOUR COMPARTMENT CHILLS PRE HEATED TO 200-250 DEGREESC AND COATED WITH REFRACTORY. WHEREAS THE UNMODIFIED CASTINGS EXHIBITED HARD SPOTS TO A DEPTH OF 6-7 MM, THE ALPHA IRON LATTICE PARAMETER OF THE SURFACE LAYERS OF THE MODIFIED CASTINGS DECREASED ON PROGRESSIVE INCREASE IN THE SI CONTENT TO APPROX. 10PERCENT (WITH SI75 PLUS AL).

UNCLASSIFIED



USSR

UDC 53.07/.08+53.001.5

BOYKO, G. I., POPOV, V. P., FEDORCHENKO, S. N.

"A Sensitive, Stable Differential Voltage Pulse Discriminator"

Tr. Soyuzn. NII priborostr. (Works of the Union Scientific Research Institute of Instrument Building), 1971, vyp. 16, pp 43-55 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A576)

Translation: A description is given of the circuitry and experimental characteristics of a differential discriminator with conversion of the input voltage pulse to current. The discriminator has fairly good stabilization of discrimination levels and width of channels as well as high resistance to amplitude and frequency overloads. The temperature instability of the discrimination level and channel width is calculated. The discriminator has 50 discrimination levels and 10 channel widths from 50 to 500 mv with discrete setting. The integral nonlinearity of the amplitude characteristic is no more than 1%, and the differential nonlinearity is no more than  $\pm 4\%$ . The instability of discrimination levels with a change in temperature by  $\pm 20^\circ\text{C}$  from the normal is no more than  $\pm 1.2\text{ mv}/10^\circ\text{C}$ , and the change in channel width is no more than  $\pm 1.5\text{ mv}/10^\circ\text{C}$  with regard to

1/2

USSR

BOYKO, G. I. et al., Tr. Soyuzn. NII priborostr., 1971, vyp. 16, pp 43-55

measurement error. The resolving time of the circuit is no more than 1  $\mu$ s. The reference signal is displaced by no more than a single channel with a change in the frequency of statistically distributed signals from  $10^3$  to  $10^5$  pulses per second. Resumé.

2/2

- 101 -

BIOLOGY  
Agriculture

USSR

BOYKO, I. B. and POPOVA, N. G., Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases

"The Effect of Some Organophosphorus Pesticides on the Biological Value of Vegetable Crops"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 35-37

Abstract: Organophosphorus chemicals, now being widely used on plants for pest, disease and weed control because of their rapid hydrolyzation, wide range of action, and good pesticide properties, are highly toxic for man, entering into his system through products containing residual amounts of these chemicals. They also affect the quality as well as various biological and sanitary indices of the products. A study was made of the stability of the organophosphorus compounds ftalophos, antio + bazudin, and their effect on the ascorbic acid content, carotene and total sugar content in several vegetables. The vegetable specimens were collected for laboratory tests 3 to 5 days after treatment. It was demonstrated that changes in the organoleptic properties of the vegetables were retained for 3-5 days after the use of pesticides. Residual amounts of pesticides were retained in the vegetables from ten to 35 days. The pesticides reduced the ascorbic acid

1/2

USSR

BOYKO, I. B., et al, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 35-37

content in cucumbers and tomatoes, raised the carotene content in carrots, and raised the sugar content in carrots and beets. After the vegetables become free of residual amounts of the chemicals, the biological indices returned to normal.

2/2

USSR

AKHMEDOV, B. K. and BOYKO, I. B., Department of Nutrition, Uzbek Scientific Research Institute of Sanitation, Hygiene, and Occupational Diseases

"Primary Toxicological Characteristics of Sumithion"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 5, 1971, p 34

Abstract: Experiments on mice and rats given the organophosphorus insecticide sumithion orally showed that the lethal doses are the following: for rats, the MID was 500 mg/kg, LD<sub>50</sub> 837.5 (756-919), LD<sub>100</sub> 1750; for mice, 100, 768 (693-843), and 1300, respectively. Mice were somewhat more sensitive than rats. The clinical symptoms of poisoning with a single toxic dose of sumithion were similar to those observed in poisonings with other organophosphorus insecticides. Initial manifestations of intoxication appeared within 5 to 15 min and were marked by motor excitement for 10 to 15 min, which was followed by inhibition. The animals became untidy and disheveled. They salivated and urinated frequently. Death set in from 1 to 5 days after ingestion of the compound.

1/1

- 66 -

USSR

UDC[537.226+537.311.33]:[537+535]

BOYKO, I. I., and CHERNOUSENKO, V. M.

"Some Questions in the Theory of Plasma Phenomena in Semiconductors. I.  
Nonstationary Effects"

Nekotoryye voprosy teorii plazmennyykh yavleniy v poluprovodnikakh. I.  
Nestatsionarnyye efekty (cf. English above. Academy of Sciences Ukrainian SSR,  
Physics Institute, Preprint 71-3), Kiev, 1971, 62 pp, ill., 23 k. (from RZh-  
Fizika, No 1, Jan 72, Abstract No 1YE1491 for authors)

Translation: The authors consider the question of establishing the pinch effect after the inclusion of a drift electric field at the initial moment of time. An investigation is conducted for crystals of two geometries: cylinder and plate. In particular, for the cylinder a "breakdown" criterion is obtained which takes into consideration volume and surface generation-recombination. Eddy electric currents (Poucault currents) are induced in a crystal inserted in an external, time-variable magnetic field. Given bipolar conductivity, the interaction of these currents with the external magnetic field leads to spatially inhomogeneous distribution of electron-hole pairs. Concentration effect in a magnetic field both increasing and decreasing with time is considered. In the latter case the effect is significantly greater.

1/1

USSR

BOYKO, I. I., and PIPA, V. I., Fizika Tverdogo Tela, Vol 13, No 2, February 1971, pp 579-584

of carriers in the crystal. The analysis indicates that experimental study of the voltampere characteristics under pinch effect conditions can provide useful information about the predominate mechanism of conductivity in a crystal. The discussion pertains primarily to the case in which the surface generation-recombination processes can be neglected, but an equation is presented for renormalization of the critical field when the surface recombination rate on the  $y = \pm d$  faces is nonzero.

2/2

- 39 -

B  
USSR

UDC 539.293

BOYKO, I. I., Institute of Semiconductors AN UkrSSR, Kiev

"Pinch Effect in Semiconductors Under Conditions of Strong Electron-Hole Plasma Degeneration."

Moscow, AN SSSR, Doklady, Vol 190, No 3, 1970, pp 555-557

Abstract: The equation of a degenerated pinch in a crystal having the shape of a plate is investigated. A semiconductor, in the form of an infinite plate ( $-d \leq y \leq d$ ) is considered, with the total current directed along the x axis. The geometry considered here is an idealization of a crystal having the shape of a parallelepiped, in which two linear dimensions substantially exceed the third. It is assumed that the quasineutrality condition is satisfied, i.e., the local concentration of holes is equal to the local electron concentration. With selected geometry the problem is reduced to a one-dimensional problem. The plate is assumed to be thin, with the thickness comparable to a bipolar diffusion length, while the rate  $1/2$

- 187 -



USSR

BOYKO, I. I., et al, AN SSSR, Doklady, Vol 190, No 3, 1970, pp 555-557

of surface generation recombination is equal to zero. In this case the carrier space distribution is determined basically by the balance of diffusion and field carrier fluxes, transversal to the total current. The equation of balance of volume generation and recombination is a supplementary condition to the equation of local carrier density variation. It is shown that there exists a solution for a certain value of the parameter proportional to the square of the carrier drift velocity, which describes a plasma detached from the crystal facets. Orig. art. has: 7 formulas.

2/2

1/2 027 UNCLASSIFIED PROCESSING DATE--300CT70  
TITLE--EFFECT OF THE DETAINED RESPIRATION TEST ON VASCULAR TONUS IN  
PATIENTS WITH HYPERTENSIVE DISEASE AFTER RHEOGRAPHIC DATA -U-  
AUTHOR--BOYKO, I.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELC, 1970, NR 4, PP 75-79

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TEST, RESPIRATION, BLOOD VESSEL, HYPERTENSION, BRAIN, BLOOD  
CIRCULATION

CONTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0113

STEP NO--UR/0475/70/000/004/0075/0079

CIRC ACCESSION NO--AP0129369

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

GIRC ACCESSION NO--AP0129369

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AFTER RHEOGRAPHIC DATA DETAINED  
RESPIRATION IN PATIENTS WITH HYPERTENSIVE DISEASE RESULTED IN A  
REDUCTION OF THE TONUS OF THE VASCULAR WALL, DECREASE OF CEREBAL BLOOD  
SUPPLY TO THE BRAIN AND SCALP AND ABSENCE OF A DISTINCT REACTION OF THE  
BLOOD VESSELS OF THE LOWER EXTREMITIES.

UNCLASSIFIED

Acc. Nr.: *AP0032014*

Ref. Code: UR 0475

PRIMARY SOURCE: *B* Vrachebnoye Delo 1970, Nr 1, pp 26-29

DYNAMICS OF RHEOGRAPHIC INDICES IN PATIENTS WITH HYPERTENSIVE  
DISEASE TREATED IN THE BIOTRON

Boyko, I.V. (Kiev)

Data are presented of rheographic investigations of the cerebral blood circulation in 114 patients with hypertensive disease (stages I and II). Marked vascular changes have been found in the carotid and vertebral arteries in all patients.

The author stresses the reliability of rheographic data in the analysis of the dynamics of the disease under the effect of treatment. A great efficiency (after rheographic data) showed treatment of hypertensive patients in stable microclimatic conditions of the biotron wards.

*mk*

*2*

*1/1*  
REEL/FRAME  
19700166